

DEPARTMENT OF THE AIR FORCE
Eglin Air Force Base, Florida

**CONSTRUCTION OF
EXPLOSIVE ORDNANCE
DISPOSAL AIR FORCE UNIQUE
TRAINING FACILITY**

**FINAL ENVIRONMENTAL
ASSESSMENT**



RCS 03-557, 03-1028

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FINDING OF NO SIGNIFICANT IMPACT
FOR
CONSTRUCTION OF AN EXPLOSIVE ORDNANCE DISPOSAL (EOD) AIR FORCE
UNIQUE TRAINING FACILITY
AT EGLIN AIR FORCE BASE, FLORIDA
RCS 03-557, -1028

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulations 1500-1508), 32 CFR Part 989, and Department of Defense Directive 6050.1, the Department of the Air Force has conducted an Environmental Assessment (EA) of the probable environmental consequences for the construction of an EOD Air Force Unique Training Facility on Eglin Air Force Base (AFB).

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVE

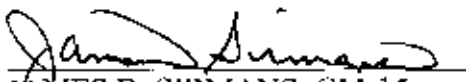
Proposed Action: The proposed action is the construction of a new facility to house the EOD Air Force (AF) Unique Course. The AF Unique Course is a follow-on to the Navy EOD School and is an Air Force Specialty Code (AFSC) awarding course for AF personnel as directed by Air Education Training Center (AETC) and Air Force Civil Engineer Support Agency (AFCESA). The proposed facility design is 4,000 square feet with four computer labs/classrooms, offices, bathrooms with showers, and a break area. A parking lot, carport, and a practical training area would bring the total area of new construction to approximately 1.36 acres. The proposed site of construction is south of and adjacent to the existing Underwater Tools and Techniques facility. AETC 366th Training Squadron (366 TRS) has requested the new facility and will manage the EOD course. The facility would not be used for live detonations.

No Action Alternative: The no action alternative would be to not construct the facility.

Analysis was conducted to determine the potential impacts to human health and the environment resulting from the proposed action and alternative. No significant impacts to natural or human-related resources have been identified. A complete, detailed discussion of issues analyzed and management strategies used to reduce potential impacts is given in the EOD Air Force Unique Training Facility EA, Chapter 4: Environmental Consequences, and Chapter 5: Plans, Permits, and Management Requirements.

FINDING OF NO SIGNIFICANT IMPACT

After a review of the EA by the Air Armament Center, Environmental Impact Analysis Process Working Group of the Environmental Protection Committee, it has been concluded that the proposed action would not have a significant adverse impact of a long-term nature to the quality of the human or natural environment. Therefore, an environmental impact statement will not be prepared. This analysis fulfills the requirements of the National Environmental Policy Act, the President's Council on Environmental Quality regulations, and AFI 32-7061, *The Environmental Impact Analysis Process*, as codified at 32 CFR Part 989.


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Director, Environmental Management

12 MAR 04
Date



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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

366 TRS/Det 3	366 th Training Squadron/Detachment 3
AAC	Air Armament Center
AAC/EMC	Environmental Management Directorate, Environmental Compliance Division
AAC/EMCE	Air Armament Center/Environmental Engineering Branch
AAC/EMH	Air Armament Center/Cultural Resources Division
AAC/EMSN	Air Armament Center/ Natural Resources Branch
AAC/EMSP	Air Armament Center/ Environmental Analysis Branch
AETC	Air Education Training Command
AF	Air Force
AFB	Air Force Base
AFCESA	Air Force Civil Engineer Support Agency
AFI	Air Force Instruction
AFSC	Air Force Specialty Code
AICUZ	Air Installation Compatibility Use Zones
ANSI	American National Standards Institute
AOC	Area of Concern
AQCR	Air Quality Control Region
BMPs	Best Management Practices
CAA	Clean Air Act
CE	Civil Engineering
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cm/hour	Centimeters per Hour
CO	Carbon Monoxide
CY	Calendar Year
dB	Decibel
dBA	A-Weighted Decibels
DOT	Department of Transportation
EA	Environmental Assessment
EOD	Explosive Ordnance Disposal
EQSD	Explosive Quantity Safety Distance
ERP	Environmental Restoration Program
FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
HUD	Housing and Urban Development
Hz	Hertz
INRMP	Integrated Natural Resources Management Plan
L_{dn}	Day-Night Average Sound Level
L_{eq}	Equivalent Sound Level
L_{eq}(24)	24-Hour Equivalent Sound Noise Level
L_{eq}(8)	8-Hour Equivalent Sound Noise Level
L_{max}	Maximum Sound Level
µg/m³	Micrograms per Cubic Meter
mg/L	Milligrams per Liter
mg/m³	Milligrams per Cubic Meter
NAAQS	National Ambient Air Quality Standards
NAVSCOLEOD/ALO	Naval School Explosive Ordnance Disposal/Air Liaison Officer
NEPA	National Environmental Policy Act
NO₂	Nitrogen Dioxide

LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS CONT'D

NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
O₃	Ozone
OWS	Oil/Water Separator
Pb	Lead
pH	Measure of Acidity
PM₁₀	Particulate Matter with an Aerodynamic Diameter Less Than or Equal to 10 Microns
PM_{2.5}	Particulate Matter with an Aerodynamic Diameter Less Than or Equal to 2.5 Microns
ppm	Parts per Million
RCS	Report Control System
ROI	Region of Influence
SAIC	Science Applications International Corporation
SEL	Sound Exposure Level
SIP	State Implementation Plan
SO₂	Sulfur Dioxide
SO_x	Sulfur Oxides
TRS	Training Squadron
U.S.	United States
URBEMIS	Urban Emissions Model
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VA	Veteran's Administration
VOC	Volatile Organic Compound

1. PURPOSE AND NEED FOR ACTION

1.1 PROPOSED ACTION

Air Education Training Command (AETC) 366th Training Squadron (366 TRS) has requested the construction of a new facility for the Explosive Ordnance Disposal (EOD) Air Force (AF) Unique Course to be conducted at Eglin AFB (Figure 1-1). The EOD AF Unique Course is a supplement to the Navy EOD School for Air Force personnel and will be managed by the 366th Training Squadron/Detachment 3 (366 TRS/DET 3) of AETC. The Proposed Action is to build a new facility to house the course.

1.2 NEED FOR PROPOSED ACTION

The proposed facility to house the EOD AF Unique Course is required for the course to be conducted at Eglin AFB. In order for the EOD AF Unique Course to fulfill the needs of the Air Force, adequate facilities must be available. The AF Unique Course is an essential follow-on to the Navy EOD School and is an Air Force Specialty Code (AFSC) awarding course for Air Force personnel as directed by AETC and the Air Force Civil Engineer Support Agency (AFCESA).

1.3 RELATED ENVIRONMENTAL DOCUMENTS

There are no related environmental documents.

1.4 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This document was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations of 1978, and 32 CFR (Code of Federal Regulations) Part 989. To initiate the environmental analysis, the proponent, the Naval School Explosive Ordnance Disposal Air Liaison Officer (NAVSCOLEOD/ALO), submitted an Air Force (AF) Form 813 – Request for Environmental Impact Analysis – to the Air Armament Center’s Environmental Management Directorate, Stewardship Division, Environmental Analysis Branch (AAC/EMSP).

1.4.1 Issues Eliminated from Detailed Analysis

Based on the scope of the Proposed Action, the No Action Alternative, and preliminary analyses, the following issues were eliminated from further analysis.

Land Use

Land use at the preferred site would not be affected. The new buildings would be erected directly adjacent to the existing Navy Underwater EOD buildings. No change to surrounding land use or to current Air Installation Compatibility Use Zones (AICUZ) would occur.

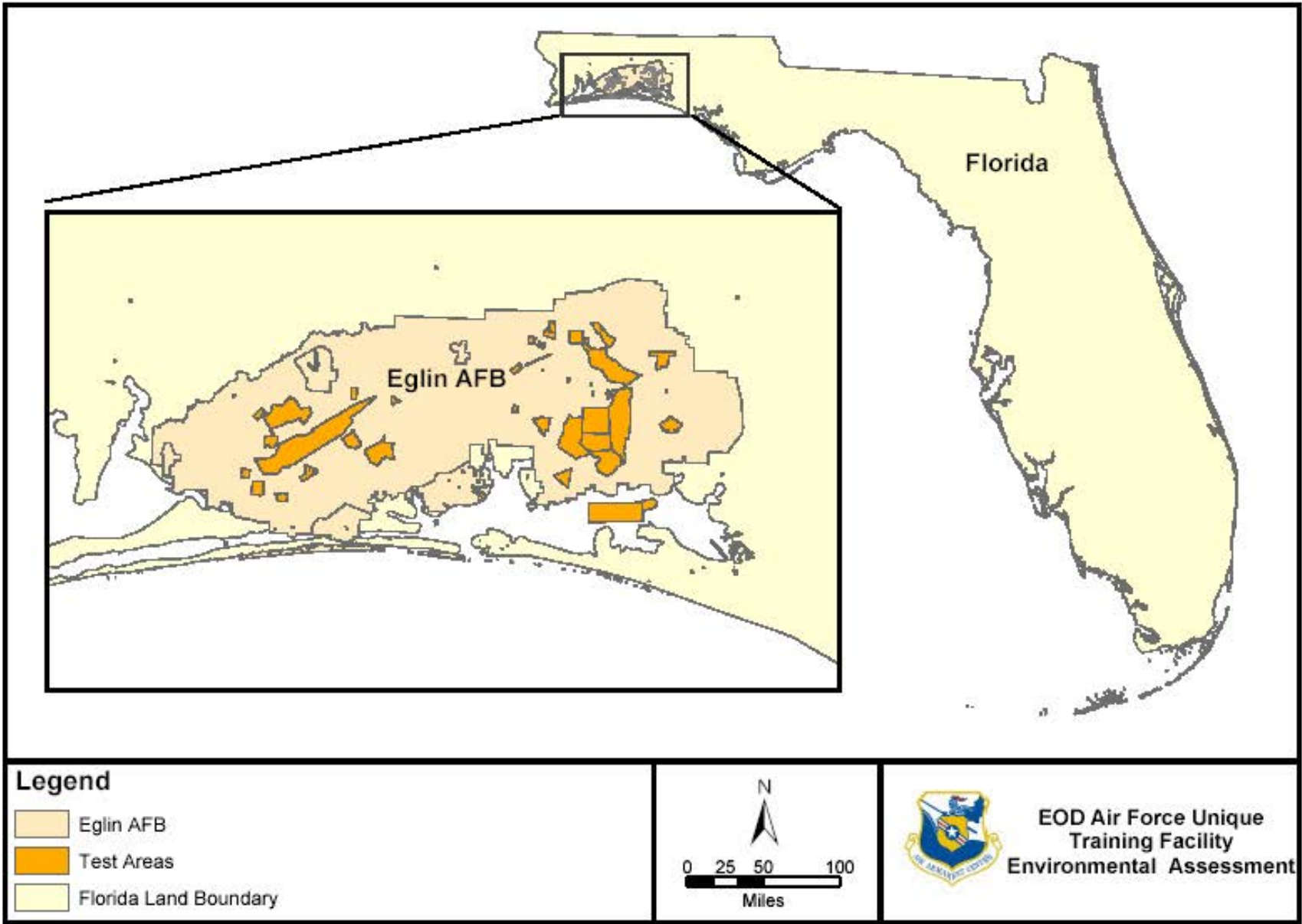


Figure 1-1. Regional Location

Environmental Justice and Child Safety

Concern that minority populations and/or low-income populations bear a disproportionate amount of adverse health and environmental effects led to the issuance of Executive Order 12898 in 1994. Executive Order 12898, Environmental Justice, and the accompanying Memorandum ensure that federal agencies focus attention on the potential for a proposed federal action to cause disproportionately high and adverse health effects on minority populations or low-income populations.

Executive Order 13045 mandates that all federal agencies assign a high priority to addressing health and safety risks to children, coordinating research priorities on children's health, and ensuring that their standards take into account special risks to children. Since the proposed activities would take place on a main base at Eglin AFB, no potential impacts to the public, including low income, minority populations, or children, are anticipated. As a result, there would be no disproportionately adverse health effects to these groups, and thus no environmental justice concerns or special risks to children.

Cultural Resources

Cultural resources were eliminated as an issue. No known cultural resources exist at this location. New discoveries would be reported immediately to Eglin's Cultural Resources Division (AAC/EMH).

Safety

Safety issues were eliminated from further analysis. The proposed EOD AF Unique Facility would only be used for classroom lectures and demonstrations that do not involve the use of explosives.

Hazardous Materials and Solid Waste

The issue of hazardous materials was eliminated from further analysis. The Proposed Action would not involve the use or storage of hazardous materials.

The issue of solid waste was eliminated from further analysis. Construction activities would potentially generate significant amounts of solid waste such as construction debris, land clearing debris, and soil. These waste streams would be segregated at generation for recycling or disposal at a secure, permitted facility in accordance with AAC Plan 32-7, Solid Waste Management. As a result, no adverse environmental impacts are anticipated and further analysis was not warranted.

Biological Resources

There is no wildlife or habitat other than maintained grass at the proposed project site. Birds and other wildlife may utilize adjacent water and shoreline vegetation as habitat; however, there will be no impact on these areas as a result of the Proposed Action. Thus, no adverse environmental impacts to biological resources are anticipated and further analysis was not warranted.

1.4.2 Issues Studied in Detail

Preliminary analysis based on the scope of the Proposed Action and No Action Alternative identified the following potential environmental issues warranting detailed analysis.

Noise from Construction

Heavy equipment would produce noise, particularly during site preparation. The proximity of the site to the Eglin runways may require that building specifications include measures to buffer outside noise. Therefore, analysis will examine where the proposed site is located with respect to Air Installation Compatible Use Zones (Figure 3-1).

Air Quality

Air quality could be affected by the addition of combustive by-products and dust to the air resulting from construction and land clearing. Potential impacts would be denoted if project emission estimates were to exceed 10 percent of Okaloosa County's Air Emission Inventory. Although analysis of this type is used for impact analysis to air quality in accordance with a General Conformity Rule determination, a general conformity determination does not apply to Eglin, because Eglin is within an attainment area with regard to USEPA air quality standards. The 10 percent criterion is used as a threshold for impact analysis for nonattainment or maintenance areas (areas that were nonattainment but now are in attainment). However, the 10 percent criterion is used here as a threshold for potential adverse impacts.

Soils

Soil type is Foxworth Sand. Erosion resulting from site preparation activities is a potential issue since the site is adjacent to Weekley Bayou. Construction and the subsequent presence of new structures may contribute to the erosion potential of surrounding soils due to soil/ground disturbance. Excess stormwater runoff resulting from the addition of impervious surfaces may also contribute to soil erosion. Areas likely to be impacted by erosion are identified based on parameters such as soil type and extent and proximity of vegetative cover to the affected area. Potential impacts are then described as they relate to the contribution to erosion potential.

Water Quality and Wetlands

There are no surface waters or wetlands on the proposed project site; however, Weekley Bayou borders the site. A Notice of Intent to Use the General Permit for New Stormwater Discharge Facility Construction must be submitted prior to project initiation according to the Florida Administrative Code (FAC) 62-25, and the Proposed Action requires coverage under the Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land (FAC 62-621). Coordination with AAC/EMCE is required to obtain stormwater and any necessary utility extension permits.

Environmental Restoration Program/Area of Concern Sites (ERP/AOC)

Because the Proposed Action involves ground disturbance activities, ERP and AOC sites at the construction site were identified to determine the potential for encountering buried debris or

contaminated soil. This information is presented in greater detail in Sections 4.5.1. and 4.5.2, and illustrated in Figures 3-8 and 3-9.

1.5 APPLICABLE REGULATORY REQUIREMENTS AND COORDINATION

Eglin AFB is currently operating under a Title V air operation permit. This permit regulates all stationary air emission sources on the Eglin Military Complex, excluding those on Hurlburt Air Field, which is a separate entity with regard to Eglin permitting. One category of emission sources regulated under the permit is the “unregulated” source category. These sources are not regulated by any specific federal or state regulation, but are regulated by the facility-wide requirements of the permit.

A design and construction permit will be required due to the increase in impervious surface area created by the construction and structures associated with the new EOD facility. The total area impacted by the proposed AF EOD Facility will be 1.36 acres. Therefore, a Notice of Intent to Use the General Permit for New Stormwater Discharge Facility Construction must be submitted prior to project initiation according to the Florida Administrative Code (FAC) 62-25, and the Proposed Action requires coverage under the Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land (FAC 62-621). Coordination with AAC/EMCE is required to obtain stormwater and any necessary utility extension permits.

1.6 DOCUMENT ORGANIZATION

This environmental assessment follows the organization established by the Council on Environmental Quality (CEQ) regulations (40 CFR, Parts 1500-1508). This document consists of the following chapters.

1. Purpose and Need for Action
2. Description of Proposed Action and No Action Alternative
3. Affected Environment
4. Environmental Consequences
5. Plans, Permits, and Management Requirements
6. List of Preparers
7. References and Applicable Documents

2. DESCRIPTION OF PROPOSED ACTION AND NO ACTION ALTERNATIVE

As required by federal regulation, this Environmental Assessment (EA) addresses the possible environmental impacts of the Proposed Action and a No Action Alternative. Section 2-6 provides a summary of the issues and potential impacts associated with the Proposed Action and No Action.

2.1 PROPOSED ACTION (PREFERRED ALTERNATIVE)

The Proposed Action, which is also the Preferred Alternative, is the construction of a new facility to house the EOD AF Unique Course. The AF Unique Course is a follow-on to the Navy EOD School and is an AFSC awarding course for Air Force personnel as directed by AETC and AFCESA. The proposed facility design is 4,000 square feet with four computer labs/classrooms, offices, bathrooms with showers, and a breakroom. A parking lot, carport, and a practical training area would bring the total area of new construction to approximately 1.36 acres. AETC (366 TRS) has requested the new facility and will manage the EOD course. The facility would not be used for live detonations. The proposed facility would be located on Weekley Bayou immediately adjacent to the existing Navy EOD facility. Figure 2-1 shows an aerial overhead of the proposed site. Figures 2-2 through 2-5 show various ground-level views of the proposed site.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, an EOD AF Unique Training Facility would not be constructed. This alternative would result in the course not being conducted at Eglin AFB or being taught in non-optimum facilities since an AF Unique Training Facility would not be constructed.

2.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Consideration was given to alternatively siting the EOD Air Force Unique Training Facility near Test Area D-51 where Navy EOD facilities are located. Due to increased cost associated with extending utilities at the site over one-quarter mile, this alternative was eliminated and will not be carried forward in this analysis. A second consideration was identified whereby the facility would be located at a site near the main base runway. This alternative location was eliminated because of the safety requirements to limit personnel travel through the explosive quantity safety distance (EQSD) arcs. EQSD arcs are safe distances from buildings or structures that contain explosives. The site is located in close proximity to the proposed new Eglin Civil Engineering EOD shop, the munitions storage facility, and the Fire Department training pit near the main flight line. Additionally, flightline noise would interrupt classroom instruction if the school were located beside the runway.

**Figure 2-1. Proposed Action (Preferred Alternative)**



Figure 2-2. View Northwest from the Proposed EOD AF Unique Facility Site



Figure 2-3. View Southwest from the Proposed EOD AF Unique Facility Site



Figure 2-4. View Northeast from the Proposed EOD AF Unique Facility Site



Figure 2-5. View North from the Proposed EOD AF Unique Facility Site

2.4 COMPARISON OF ALTERNATIVES

Table 2-1 summarizes the issues and potential impacts associated with the alternatives.

Table 2-1. Summary of Issues, Proposed Action and No Action Alternative, and Potential Impacts

Issue	Proposed Action	No Action
Air Quality	Combustive emissions and fugitive dust from construction would be temporary. Air quality criteria would not be exceeded and the impacts would not be significant.	No impacts would occur.
Noise	Noise would not be significant. The construction site is within existing Air Installation Compatible Use Zone noise contours of 65 to 70 dBA. Construction noise would not perceptibly increase the average noise.	No impacts would occur.
Soils/Erosion	Impacts to soils would not be significant. Erosion would be controlled through construction best management practices.	No impacts would occur.
Water Quality and Wetlands	Wetlands would not be disturbed. Impervious surface area would increase resulting in an increase in stormwater runoff. An NPDES construction permit would be necessary.	No impacts would occur.
ERP/AOC Sites	ERP/AOC sites are located at proposed construction sites but would not be disturbed.	No impacts would occur.

3. AFFECTED ENVIRONMENT

3.1 AIR QUALITY

Air quality in a given location is described by the concentration of various pollutants in the atmosphere, generally expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

Pollutant concentrations are compared to federal and state ambient air quality standards to determine potential effects. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare, with a reasonable margin of safety. The national ambient air quality standards (NAAQS) are established by the U.S. Environmental Protection Agency (USEPA). In order to protect public health and welfare, the USEPA has developed numerical concentration-based standards or NAAQS for six “criteria” pollutants (based on health related criteria) under the provisions of the Clean Air Act Amendments of 1970 (CAA). There are two kinds of NAAQS: primary and secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air to protect public health including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards prescribe the maximum concentration or level of air quality required to protect public welfare including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

National ambient air quality standards have been established for: 1) ozone (O_3), 2) nitrogen dioxide (NO_2), 3) carbon monoxide (CO), 4) sulfur oxides [SO_x , measured as sulfur dioxide (SO_2)], 5) lead (Pb), 6) particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($\text{PM}_{2.5}$). The NAAQS are the cornerstone of the CAA. Although not directly enforceable, they are the benchmark for the establishment of emission limitations by the states for the pollutants that USEPA determines may endanger public health or welfare. Florida has adopted the NAAQS except for sulfur dioxide (SO_2). USEPA has set the annual and 24-hour standards for SO_2 at 0.03 ppm ($80 \mu\text{g}/\text{m}^3$) and 0.14 ppm ($365 \mu\text{g}/\text{m}^3$) respectively. Florida has adopted the more stringent annual and 24-hour standards of 0.02 ppm ($60 \mu\text{g}/\text{m}^3$) and 0.01 ppm ($260 \mu\text{g}/\text{m}^3$) respectively. In addition, Florida has adopted the national secondary standard of 0.50 ppm ($1,300 \mu\text{g}/\text{m}^3$). Federal and state ambient air quality standards are presented in Table 3-1.

Table 3-1. National and State Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Federal Primary NAAQS ^{1,2,3}	Federal Secondary NAAQS ^{1,2,4}	Florida Standards
Carbon Monoxide (CO)	8-hour 1-hour	9 ppm (10 mg/m ³) 35 ppm (10 mg/m ³)	No standard No standard	9 ppm (10 mg/m ³) 35 ppm (40 mg/m ³)
Lead (Pb)	Quarterly	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³
Nitrogen Dioxide (NO ₂)	Annual	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)
Ozone (O ₃)	1-hour ⁵ 8-hour ⁶	0.12 ppm (235 µg/m ³) 0.08 ppm (157 µg/m ³)	0.12 ppm (235 µg/m ³) 0.08 ppm (157 µg/m ³)	0.12 ppm (235 µg/m ³) 0.08 ppm (157 µg/m ³)
Particulate Matter ≤10 Micrometers (PM ₁₀)	Annual 24-hour ⁷	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³
Particulate Matter ≤2.5 Micrometers (PM _{2.5})	Annual 24-hour ⁸	15 µg/m ³ 65 µg/m ³	15 µg/m ³ 65 µg/m ³	15 µg/m ³ 65 µg/m ³
Sulfur Dioxide (SO ₂)	Annual 24-hour 3-hour	0.03 ppm (80 µg/m ³) 0.14 ppm (365 µg/m ³) No standard	No standard No standard 0.50 ppm (1300 µg/m ³)	0.02 ppm (60 µg/m ³) 0.10 ppm (260 µg/m ³) 0.50 ppm (1300 µg/m ³)

Source: FDEP, 2002; USEPA, 2003 (web site: www.epa.gov/air/criteria.html)

1. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1. The USEPA has been given the authority by the federal courts to proceed with the implementation of the new 8-hour ozone standard and the PM_{2.5} standard; however, they have not been implemented at this point and are included for information only.
2. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury; ppm refers to parts per million by volume.
3. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
4. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
5. The ozone one-hour standard still applies to areas that were designated nonattainment when the ozone eight-hour standard was adopted in July 1997.
6. The ozone eight-hour standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard.
7. The PM₁₀ 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
8. The PM_{2.5} 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

The fundamental method by which the USEPA tracks compliance with the NAAQS is the designation of a particular region as “attainment,” “nonattainment,” or “unclassifiable.” Areas meeting or having better air quality than the NAAQS are said to be in attainment. Areas that exceed the NAAQS are said to be in nonattainment. Areas that cannot be classified on the basis of available information as attainment or nonattainment are defined as unclassifiable and are treated as attainment areas. Attainment areas can be further classified as maintenance areas. Maintenance areas are areas that were previously nonattainment but have reduced pollutant concentrations below the standard and must maintain some of the nonattainment area plans to stay in compliance.

The Eglin Military Complex is located in the Mobile (Alabama)–Pensacola–Panama City (Florida)–Southern Mississippi Interstate Air Quality Control Region (federal AQCR #5). In Florida, AQCR #5 consists of the territorial area encompassed by the boundaries of the following

jurisdictions: Escambia County, Santa Rosa County, Okaloosa County, Walton County, Holmes County, Washington County, Bay County, Jackson County, Calhoun County, and Gulf County. The USEPA has classified the Florida counties in this AQCR as attainment for all criteria pollutants (40 CFR 81.310).

Over the past few years, ground-level ozone has become a problem along the Gulf Coast. Indications are that the prevailing wind patterns (land/sea breeze cycle) may be keeping pollutants (generated locally and transported into the area from out of the region) over the Florida Panhandle. Eight-hour ozone monitors have been operated in Pensacola (3) since 1999 and Navarre (1) and Panama City (1) since 2000. All monitoring stations in Pensacola, Navarre, and Panama City have three complete years of data (2000–2002) – the monitoring period needed to make an attainment/nonattainment designation. An exceedence of the standard was recorded in all three cities during 2000, but none have been recorded since. The three-year average for all locations is below the 8-hour standard of 85 parts per billion; therefore, all areas remain in attainment.

The federal 8-hour standard for ozone has been established at a level equivalent to 85 parts per billion averaged over any 8-hour period. An area will be considered as nonattainment (not meeting the standard) if the average of the annual fourth highest ozone readings at any ozone monitor for any three year period equals or exceeds 85 parts per billion.

Identifying the affected area for an air quality assessment requires knowledge of pollutant types, source emissions rates and release parameters, proximity relationships of project emission sources to other emissions sources, and local and regional meteorological conditions. The affected area for emissions of O₃ precursors (volatile organic compounds [VOC] and nitrogen oxides [NO_x]) from the project would be the air shed (AQCR #5) surrounding Eglin AFB. However, because of the large size of the air quality control region, the affected area for O₃ and its precursors for this analysis is defined as Santa Rosa, Okaloosa, and Walton counties. Therefore, site-related emissions of VOCs and NO_x are compared to emissions inventory generated within these counties. The affected area for the inert pollutants (CO, SO₂, Pb, PM₁₀) that do not undergo a chemical reaction in the atmosphere is limited to the immediate vicinity of the particular activity and is also compared to the Santa Rosa, Okaloosa, and Walton counties' portion of the AQCR emissions inventory as a means of assessing potential changes in air quality.

An air emissions inventory is an effort to qualitatively and quantitatively describe the amount of emissions from a facility or within an area. Inventories are designed to locate pollution sources, define the type and size of sources, define and characterize emissions from each source, determine relative contributions to air pollution problems by classes of sources and by individual sources, and determine the adequacy of regulations. The air emissions inventory is an estimate of total mass emissions of pollutants generated from a source or sources over a period of time, normally a year. Accurate inventories are needed for estimating the interrelationship between emissions sources and air quality and for determining whether an emission source requires an operating permit based on actual emissions or the potential to emit.

The latest air emissions inventories for Eglin AFB quantifies emissions from mobile sources based on 2000 calendar year activity (U.S. Air Force, 2001) and stationary sources based on

2000 calendar year activity (U.S. Air Force, 2001a). The most recent county inventories quantify emissions from stationary and mobile sources based on 2000 calendar year activity (FDEP, 2002). The 2000 air emissions inventory provides actual emissions from all identified sources.

The most current emissions inventories for Eglin AFB and Okaloosa County are presented in Table 3-2. All inventories include mobile (aircraft, on-road vehicles, off-road vehicles, etc.) sources.

Table 3-2. Baseline Emissions Inventory (Tons)

Pollutant Emission Source	Pollutants (tons/year)				
	CO	NO _x	PM ₁₀	SO _x	VOCs
Eglin AFB Stationary Emissions (CY2001)	72	96	101	11	109
Eglin AFB Mobile Source Emissions (CY2001)	16,935	80,823	6,143	12,672	5,752
Eglin AFB Totals	17,007	80,919	6,244	12,683	5,861
Okaloosa County Total (CY2001)*	71,952	8,296	7,363	698	11,135

*Includes mobile sources

Source: U.S. Air Force, 2002; U.S. Air Force, 2003; USEPA, 2003a

3.2 NOISE

Noise may be perceived as sound that interrupts or interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive, stationary or transient. Stationary noise sources are normally related to specific land uses, such as housing tracts or industrial plants. Transient noise sources move through the environment, either along established paths (e.g., highways and railroads), or randomly (e.g., a bulldozer operating in a large field). People and the places they occupy and wildlife are noise receptors, meaning they perceive noise and may be affected by it. Places considered to be noise receptors include schools and hospitals because the people within these facilities are the most likely to be easily disturbed. Noise receptors may exhibit various degrees of response to noise according to the noise type, characteristics of the sound source, their own sensitivity to noise, the time of day, and the distance between them and the sound source.

Definition of Resource

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces minute pressure waves that travel through a medium, like air, and are sensed by the eardrum. As the acoustic energy increases, the intensity or amplitude of the pressure waves increases, and the ear senses louder noise. Sound intensity varies widely and is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is nothing more than a mathematical tool that simplifies dealing with very large and very small numbers. For example, the logarithm of the number 1,000,000 is 6, and the logarithm of the number 0.000001 is -6 (minus 6). As more zeros are added before or after the decimal point, converting these numbers to their logarithms greatly simplifies calculations that

use these numbers. Logarithmically, sound levels are described in terms of decibels (dB). Zero dB is the threshold of hearing; normal human speech ranges from 60 – 65 dB; approximately 140 dB is the threshold of pain. It should also be noted that an approximate doubling in absolute sound energy is reflected as an increase of 3 dB. However, for the average person to sense a doubling in sound, a 10-dB increase in noise level is normally required (USEPA, 1974).

The frequency of sound is measured in cycles per second, or hertz (Hz). This measurement reflects the number of times per second the air vibrates from the acoustic energy. Thunder is a low frequency sound, while whistles are a high frequency sound. Sound measurement is further refined through the use of weighting scales. The normal human ear can detect sounds that range in frequency from about 20 Hz to 15,000 Hz. However, all sounds throughout this frequency range are not heard equally well. Therefore, through internal electronic circuitry, some sound meters are calibrated to emphasize frequencies in the 1,000 to 4,000 Hz range. The human ear is most sensitive to frequencies in this range, and sounds measured with these instruments are termed “A-weighted.”

The duration of noise events and the number of times they occur are also important considerations in assessing noise impacts. Based on measurements of individual noise events, average sound levels over extended periods of time can be calculated. In assessing noise associated with the proposed construction projects, several metrics are considered.

The term “metric” describes a standard of measurement. As used in environmental noise analyses, there are many different types of noise metrics. Each has a different meaning or interpretation, and each was developed to represent the effects of environmental noise. The primary noise metrics considered in this EA are the maximum sound level (L_{\max}), the Sound Exposure Level (SEL), and the equivalent sound level (L_{eq}). Each metric represents a “tier” for quantifying the noise environment. In this EA, all noise level metrics are A-weighted, and are expressed in terms of A-weighted decibels (dBA). The assessment of noise impacts will focus on average noise levels, specifically L_{eq} .

L_{\max} represents the first tier in quantifying the noise environment. It is the highest instantaneous sound level measured during a noise event. For a receptor, noise levels start at ambient, background noise levels, rise up to a maximum level as the event occurs (like a motorcycle moving down a street), and then return to background levels as the noise source moves away from the receptor.

SEL, the second tier, combines the maximum sound level associated with the noise event and the duration of the event. L_{\max} alone may not represent how intrusive a noise event may be because it does not consider the length of time the noise event persists. SEL combines both of these characteristics into a single metric. It is important to note, however, that SEL does not directly represent the sound level heard at any one time, but rather provides a measure of the total acoustic exposure associated with the entire event, and normalizes it into a one-second duration. Therefore, for noise events that last longer than one second, the SEL level, in dB, will be greater than the L_{\max} level, in dB. SEL values are also important because that metric forms the basis for the calculation of average sound levels over periods of time.

Although the first and second tiers (L_{\max} and SEL) provide a description of a specific noise event, neither describes in a single metric the impact of multiple exposures to elevated noise events. The third tier, which may be used to estimate overall noise impacts, is the equivalent sound level (L_{eq}). This metric represents the sum of the individual noise events and the average of the resulting noise level over a specified period of time. Thus, it is a composite metric that includes the maximum noise level associated with each discrete event, the duration of each discrete event, and the number of discrete events that occur. The noise assessment in this EA uses time-averaged metrics.

Time-Averaged Cumulative Day-Night Average Noise Metrics

The equivalent sound level (L_{eq}) is a metric reflecting average continuous sound. The metric considers variations in sound magnitude over periods of time, sums them, and reflects, in a single value, the acoustic energy present during the time period considered. Common time periods for averaging are 1, 8, and 24-hour periods.

The Day-Night Average Sound Level (L_{dn}) also sums the individual noise events and averages the resulting level over a specified length of time. Normally, this is a 24-hour period. Thus, like L_{eq} , it is a composite metric representing the maximum noise levels, the duration of the events, and the number of events that occur. However, this metric also considers the time of day during which noise events occur. This metric adds 10 dB to those events that occur between 10:00 P.M. and 7:00 A.M. to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the daytime. It should be noted that if no noise events occur between 10:00 P.M. and 7:00 A.M., the value calculated for L_{dn} would be identical to that calculated for a 24-hour equivalent noise level ($L_{eq(24)}$). This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when there are multiple noise events to be considered.

Average Sound Level metrics are the preferred noise metrics of the Department of Housing and Urban Development (HUD), the Department of Transportation (DOT), the Federal Aviation Administration (FAA), the U.S. Environmental Protection Agency (USEPA), and the Veteran's Administration (VA). Scientific studies and social surveys have found that Average Sound Level metrics are the best measure to assess levels of community annoyance associated with all types of environmental noise. Therefore, their use is endorsed by the scientific community and governmental agencies (ANSI, 1980, 1988; USEPA, 1974; FICUN, 1980; FICON, 1992; U.S. Army, 1994). In general, there are no recommended restrictions on any land uses at day-night average sound levels of 65 dBA or less.

Existing Conditions

The current noise environment is characterized by vehicle and aircraft noise. The Eglin Main Airfield is situated about 4,000 feet northwest of the project area. An Air Force trailer park is located approximately 400 feet southeast of the project area. The annual average noise from the airfield, represented as Air Installation Compatible Use Zones (AICUZ) contours in Figure 3-1, was calculated by the NOISEMAP noise model. According to model output, annual day-night average airfield noise ranges from 60 to 65 dBA. In general, there are no recommended restrictions on any land uses at day-night average sound levels of 65 dBA or less (Figure 3-1).

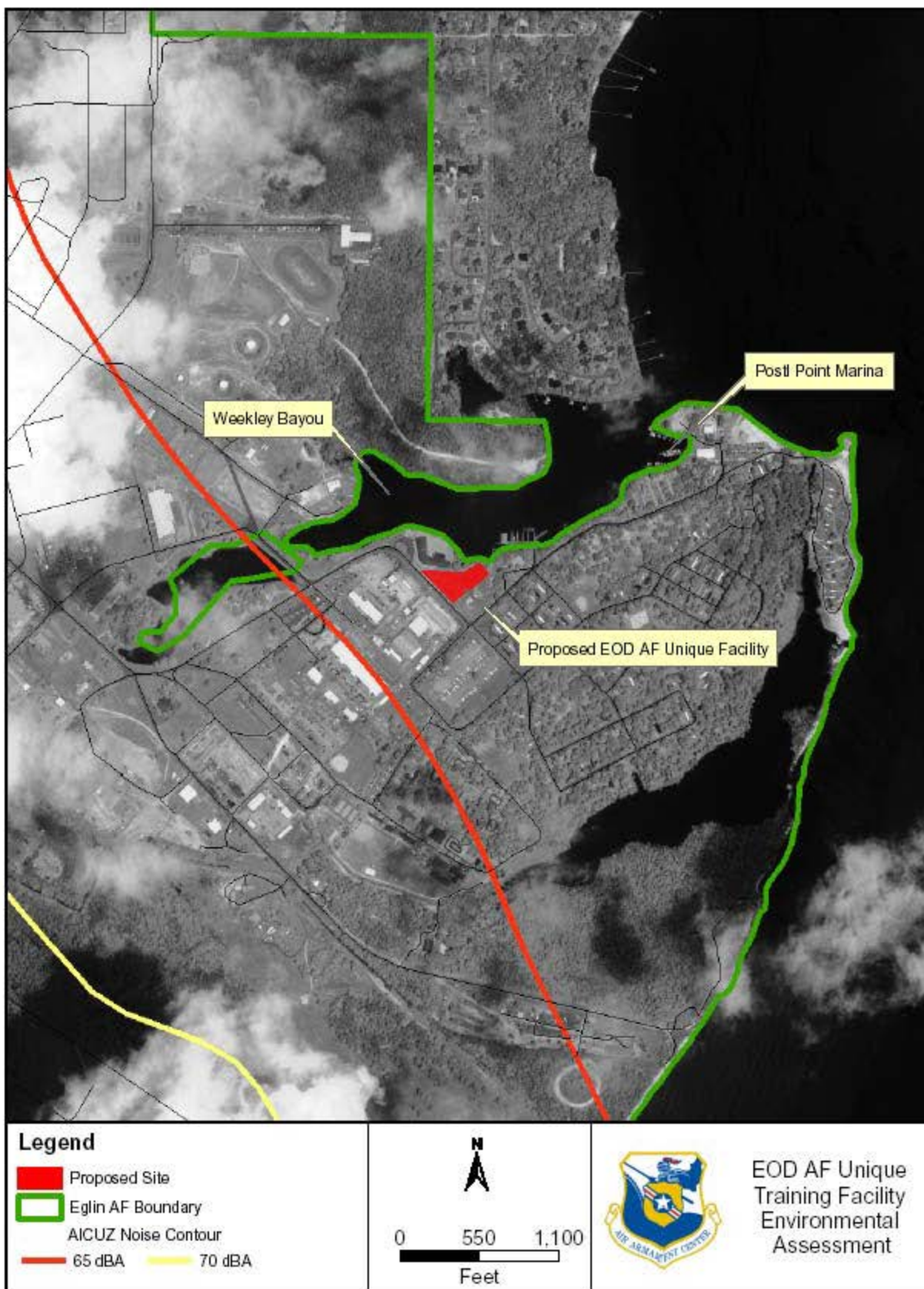


Figure 3-1. Noise Environment at the Proposed Action Location

3.3 SOILS

The prevailing soil type at the Proposed Action site is Foxworth Sand, which can be characterized by greater than 90 percent sand to a depth of 6 feet or more and clay content generally less than 3 percent (Figure 3-2). Foxworth Sand is excessively sandy soil that becomes very droughty during periods of low precipitation and is rapidly saturated during major rainfall events. The hydraulic conductivity values are greater than 34 cm/hour retaining small amount of available water. Organic matter content ranges from 1 to 2.7 percent in the surface layer. Calcium is the dominant base with extractable calcium and magnesium rarely exceeding 0.5 milliequivalents per 100 grams of surface soil.

The Foxworth series consists of very deep soils that formed in sandy marine or aeolian sediments. These soils are on broad, nearly level and gently sloping uplands and sloping to steep side slopes leading to drainageways. Slopes range from 0 to 8 percent but most commonly are 0 to 5 percent. Runoff is very slow and permeability is rapid or very rapid. A water table fluctuates between depths of 48 to 72 inches below the soil surface for 1 to 3 months during most years and 30 to 48 inches for less than 30 cumulative days in some years. Thickness of sand exceeds 80 inches. Reaction ranges from very strongly acid to slightly acid throughout. Texture is sand or fine sand throughout and silt plus clay content in the control section is 5 to 10 percent.

3.4 WATER QUALITY AND WETLANDS

3.4.1 Surface Water Resources

The nearest surface water is Weekley Bayou, which is adjacent to the proposed site (Figure 3-3). Weekley Bayou, a small inlet of Choctawhatchee Bay, is primarily used for recreational purposes and for fuel delivery. Eglin's Postl Point Marina is located on this bayou. Water quality data was not available for Weekley Bayou, but it is within a section of Choctawhatchee Bay that is listed in the FDEP 305b report as fully meeting water quality standards (FDEP, 2000). A buried stormwater discharge pipe is onsite. The location of the pipe is flagged (Figure 3-4).

3.4.2 Groundwater

There are two significant aquifers at Eglin AFB and the surrounding area: the Surficial Aquifer, also known as the Sand and Gravel Aquifer, and the Floridan Aquifer. The Sand and Gravel Aquifer is a generally unconfined, near-surface unit segregated from the underlying limestone Floridan Aquifer by the low-permeability Pensacola Clay confining bed.



Figure 3-2. Soil Types Surrounding the Proposed Action Location



Figure 3-3. Surface Waters and Wetlands Near the Proposed Action Location



Figure 3-4. Buried Stormwater Discharge Pipe

Sand and Gravel Aquifer

The Sand and Gravel Aquifer consists of the Citronelle Formation and marine terrace deposits, which thicken to the southwest, reaching a maximum thickness of 1,200 feet at Mobile Bay, Alabama. Both of these geologic units occur at the land surface. The thickness of the Sand and Gravel Aquifer in the region of influence (ROI) ranges from 25 to 300 feet. The aquifer is composed of clean, fine-to-coarse sand and gravel, but locally contains silt, silty clay, and peat beds. In the vicinity of Fort Walton Beach, the aquifer consists of several distinct sandy units, the lowest of which is the main producing zone. Yields from wells within this zone vary considerably but are generally in the range of 200-400 gallons per minute (U.S. Army Corps of Engineers, 1994).

In the Coastal Lowlands region, the water table is at or within a few feet of land surface. In the Western Highlands region, the water table may occur at considerable depth below land surface. In this area, lakes and perched waters occur where local shallow clay and silt layers restrict the downward movement of water to the regional water table. On the installation, some of the range area wells draw relatively small amounts of water from this aquifer for operational uses. The Sand and Gravel Aquifer has been identified as an important source of water for Escambia, Okaloosa, and Santa Rosa counties. It is used primarily for irrigation in Okaloosa and Walton counties (FDEP, 2000).

Water quality of the Sand and Gravel Aquifer is good, being very soft and relatively demineralized. Raw water from the aquifer has a pH ranging from 3.0 to 10.2, although it is usually acidic. Its average pH is 4.9 in the upper zone and 7.2 in the lower (production) zone. The nitrate average for the upper zone is 0.81 milligram per liter (mg/L) and 0.11 mg/L for the

lower zone. Iron content of the aquifer ranges from 0.07 mg/L to 95 mg/L with a median of 2.05 mg/L (Maddox et al., 1992).

On Eglin AFB there are numerous shallow aquifer groundwater monitoring wells. These groundwater monitoring wells are generally associated with either FDEP permitted facilities requiring a groundwater monitoring plan (open burn/open detonation, landfills and wastewater spray fields) or with ERP sites. At ERP sites, groundwater wells are installed where groundwater contamination may have occurred.

The Sand and Gravel Aquifer is vulnerable to contamination from surface pollutants. Several ERP sites on base have been reported as having various amounts of petroleum hydrocarbons, pesticides, heavy metals, and a wide variety of other compounds associated with the groundwater. Additional aquifer contamination may have occurred from areas of concern (AOCs) not yet assessed under the ERP. AOCs are generally associated with former landfills, hardfills, spill sites, disposal areas, industrial operations, oil/water separators, open burn/open detonation areas, and munitions testing.

Floridan Aquifer

The Floridan Aquifer, which occurs beneath most of the state of Florida, consists of a thick sequence of interbedded limestones and dolomites overlain by the Pensacola Clay confining bed. The Bucatunna Formation confining bed separates the Floridan Aquifer into upper and lower limestone units. The lower limestone unit is saline and is not used as a water source.

The upper limestone of the Floridan Aquifer is the principal source of water used at Eglin AFB and in the surrounding communities. The water used is not returned to the aquifer; it is “consumed” by AAC and associate unit activities and base residents. The Northwest Florida Water Management District regulates the consumption of water from the Floridan Aquifer through consumptive use permits. Eglin operates 61 water wells, requiring 18 consumptive use permits. Many nearby cities and businesses also have wells that draw water from the same aquifer. Conservation of water is therefore essential to protect a valuable resource and to ensure the usage limits identified in our permits are not exceeded. Water conservation measures taken at Eglin include restricting irrigation and installing low-flow plumbing fixtures during housing and office renovations and new construction. Irrigation systems are also being converted to withdraw water from the shallow Sand and Gravel Aquifer. The use of drought-resistant landscaping is encouraged. These efforts will protect the Eglin water supply by reducing consumptive uses of water withdrawn from the Floridan Aquifer (U.S. Air Force, 2001). The Floridan Aquifer is the main potable water source for Eglin AFB and surrounding municipalities. Eglin AFB has over 43 permitted wells that use the Floridan Aquifer waters. These wells are required to be sampled on a regular basis as part of their operating permit. Water from these wells is sampled for all state and federal primary and secondary drinking water standards. All operating production wells currently meet drinking water standards set by the state.

Groundwater Information for the Proposed Construction Site

Groundwater storage and movement in the upper limestone of the Floridan Aquifer occurs in interconnected, intergranular pore spaces, small solution fissures, and larger solution channels

and cavities. Yields from wells are large, ordinarily in the range of 250 to more than 1,000 gallons per minute, and the water is found under confined conditions throughout the Eglin AFB area (USGS, 2002).

3.5 ERP/AOC SITES

There are two ERP/AOC sites located on or near the Proposed Action location (Figure 3-5). The proposed location is directly on Site DP-97.

Site DP-97, The Old Hobby Shop

Site DP-97 is located northeast of the Civil Engineering Compound near Weekley Bayou on Eglin Main Base. Subsequent to its use as a base recreational workshop (Old Hobby Shop) from the 1940s-1970s, there was a warehouse facility on the site. The warehouse and associated structures were demolished in 1988. The associated buildings adjacent to the warehouse facility housed grease racks, wash racks, and a paint shop. This facility included an oil/water separator (OWS) connected to the CE Compound vehicle wash rack.

A characterization investigation effort was implemented in 1997 to determine whether chlorinated volatile organic compound contamination existed at the site. Trichloroethene, 1,2-dichloroethene, and benzene were determined to be present in shallow ground water at elevated concentrations. A plan to include full-scale sodium lactate injection was conducted in May 2003. While they have shown some reductions, levels remain above regulatory standards beneath the site (including the Proposed Action site). Depending on upcoming analytical data collected from monitoring wells, additional injections may be necessary. Ground water sampling conducted in November 2002, March 2003, May 2003, and June 2003 indicates that there has been no significant migration of the contamination plume. Monitoring wells at DP-97 are used for semiannual ground water monitoring and annual sampling events.

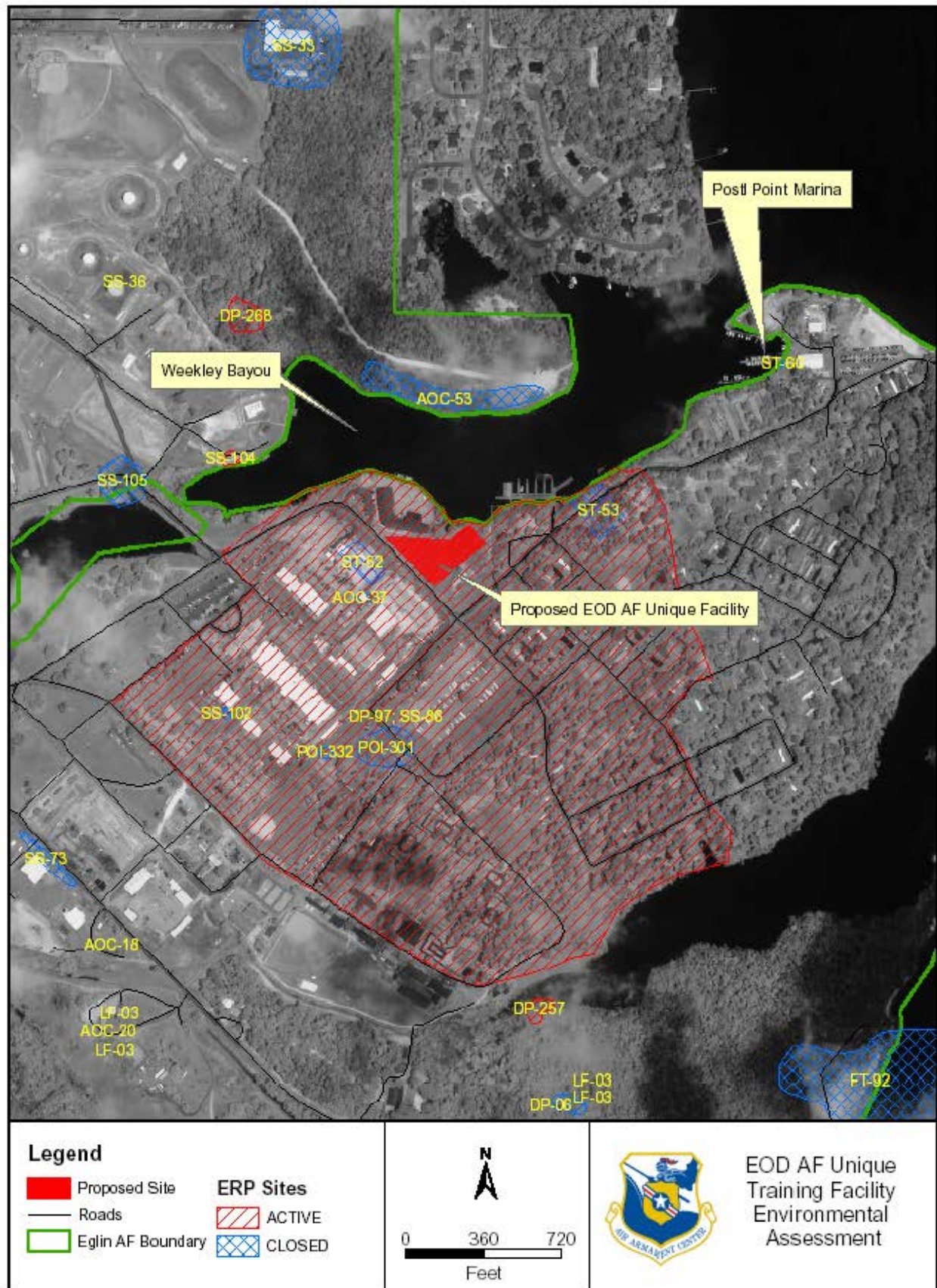


Figure 3-5. ERP/AOC Sites Near the Proposed Construction Site

4. ENVIRONMENTAL CONSEQUENCES

4.1 AIR QUALITY

4.1.1 Proposed Action

Air quality impacts would not be significant. The emissions and dust from building construction and site preparation activities would have minimal temporary effects on air quality.

An analysis of project generated air emissions was conducted to determine if:

- There would be a violation of a National Ambient Air Quality Standard (NAAQS).
- Emissions contributed to an existing or projected air quality violation.
- Sensitive receptors were exposed to substantial pollutant concentrations.
- Pollutant emissions were equal to or greater than 10 percent of Okaloosa County pollutants emissions.
- Any significance criteria established by the Florida State Implementation Plan (SIP) was exceeded.
- A permit to operate was required.
- A change to the Title V permit was required.

Under existing conditions, the ambient air quality in Okaloosa County is classified as attainment for all criteria pollutants.

The primary emission source category associated with the Proposed Action is construction activities, particularly site preparation. Construction would generate both combustive emissions from heavy equipment usage and fugitive dust (particulate matter) emissions from ground disturbance from land clearing, ground excavation, and cut and fill operations. Fugitive emissions would be greatest during site clearing and grading activities and would vary from day to day depending on the amount of land being worked, the level of construction activity, the specific operations, and the prevailing meteorological conditions.

Emissions were estimated using the Urban Emissions Model (URBEMIS) 2001 for Windows, version 6.2.2. For the new EOD facility construction, it was calculated that building space would occupy 4,000 square feet, and that all disturbed land area would encompass 1.36 acres including the area of the buildings, plus additional area required for parking lot and road construction. The model provided estimates of quantities in tons per year of volatile organic compounds (VOCs), nitrogen oxides (NO_x), carbon monoxide, particulate matter (PM₁₀), and sulfur dioxides (SO₂). The model considered emissions generated from site grading, construction worker vehicle operations, stationary equipment, gas and diesel mobile equipment, and architectural coatings. Table 4-1 summarizes the modeled total emissions for the new EOD facility buildings construction project compared to Okaloosa County emissions.

Table 4-1. Total Emissions for Construction Activities

Pollutant Emission Source	Emissions (tons/year) ^b				
	CO	NO _x	PM ₁₀	SO ₂	VOC
Okaloosa County^a CY2001 Emissions	71,952	8,296	7,363	698	11,135
Project Construction	0.04	11.6	0.73	0.91	1.4
Percent of Okaloosa County Emissions	0.00006	0.14	0.01	0.13	0.012

^a USEPA, 2003a^b CO = carbon monoxideNO_x = nitrogen oxidesPM₁₀ = particulate matter with an aerodynamic diameter equal to or less than 10 micronsSO₂ = sulfur dioxide

VOC = volatile organic compounds

In accordance with Section 176(c), USEPA promulgated the General Conformity Rule that is codified at 40 CFR 93, Subpart B. The Conformity Rule only affects federal actions occurring in nonattainment (does not meet national ambient air quality standards) and maintenance areas (nonattainment area reclassified to attainment status and under a maintenance plan). Since the Proposed Action is located in an attainment area, the Air Force will not need to prepare a conformity determination for the Proposed Action in Okaloosa County.

Even though a conformity determination is not required, the federal action must still comply with the conformity requirements of Section 176(c); that is, the federal action may not exceed the threshold and criteria outlined above. Therefore, the impact analysis used the 10 percent criteria found in the conformity rule to assess possible air quality impacts. For impacts screening in this analysis, a more restrictive criteria than found in the General Conformity Rule was used. Rather than comparing emissions from project activities to 10 percent of regional inventories, emissions were compared to 10 percent of Okaloosa County's calendar year (CY) 2001 emissions (a more restrictive comparison).

As can be seen from the information presented in Table 4-1, increased emissions are extremely small when compared to the Okaloosa County emissions inventory and are well below the 10 percent criteria described above. Any emission effects would be temporary and would fall off rapidly with distance from the construction site. Due to the short-term effect of construction-related fugitive and combustive emissions and the relatively small area affected, there would be no potential adverse cumulative decrease in air quality associated with construction activities.

4.1.2 No Action Alternative

No impacts to air quality would occur under this alternative.

4.2 NOISE

4.2.1 Proposed Action

Daily activities at Eglin AFB contribute noise to the region. Aircraft operations and vehicle traffic constitute the greatest on-going sources of noise in the area. However, during the

construction of the proposed buildings, diesel generators, support equipment, and other heavy earth moving equipment will operate on the construction site on a limited basis. Noise resulting from the use of this equipment and other construction activities is addressed below.

Table 4-2 shows SELs associated with typical equipment, in varying operating regimes, considered in the analysis. These SEL values form the basis for the subsequent calculation of time-averaged noise levels emanating from the construction site.

For the assessment of construction noise, a 1.36-acre “activity area” was designated. This represents an estimation of the approximate area that would contain most of the equipment operation.

Table 4-2. Typical Equipment Sound Levels

Equipment	Sound Level (in dBA) Under Indicated Operational Mode ¹		
	Idle Power	Full Power	Moving Under Load
Forklift	63	69	91
Crane	66	83	87
Dozer	63	74	81
Grader	63	68	78
Diesel Generator	--	76	--

¹Measured at 125 Feet

Source: U.S. Air Force, 1998

The first step in the analysis was to calculate the total acoustic energy that would be generated in the area based on specific equipment, operating mode, and operating time in that mode. These data also provided information on individual equipment items’ relative contribution to the total amount of acoustic energy generated on the site. Next, individual equipment was spatially distributed throughout the activity area considering “most likely” areas of operation. This yielded an equipment-weighted contribution to total site acoustic energy at different points throughout the site. With this spatial distribution, it was then possible to calculate a mean and standard deviation for the distribution along an axis running through the site.

These data were then used to normally distribute the total site energy throughout the site. Finally, the normally distributed energy from multiple source points throughout the site was aggregated at a range of points at varying distances from the site edge. This allowed a determination at those points of the total acoustic energy that had emanated off-site from all noise sources.

Table 4-3 shows time-averaged noise levels at a range of distances from the edge of the activity area.

Table 4-3. Calculated Noise Levels Associated with the Proposed Action

Distance From Site Edge (In Feet)	L _{eq(8)} (In dBA)	L _{eq(24)} (In dBA)
100	77.9	73.2
200	72.9	68.2
300	69.9	65.2
400	67.8	63.0
500	66.1	61.3

It should be noted that this assessment is conservative. Noise is attenuated (reduced) as it spreads from its source. Distance, atmospheric conditions (temperature and humidity), terrain, and topography all contribute to the level of attenuation actually occurring. However, depending on specific circumstances, some conditions could counteract others. For example, sloping ground, vegetation, and foliage generally increase the level of attenuation over given distances. However, if the ground is extremely hard and rock-covered, a reflective surface is formed, and the amount of attenuation actually achieved is reduced. Due to the complex and situation-specific interactions of all of these influencing factors, not all were considered.

The prime attenuation mechanism considered in the calculations is spherical spreading. This results in an approximate 6 dBA attenuation for every doubling of distance from the sound source. Other data on attenuation mechanisms indicate that under ideal conditions, atmospheric attenuation could reduce sound levels by up to 2 dBA for every 100 feet of spread, and dense-leafed foliage or grass growing in soft ground could decrease levels by approximately 2 dBA per 100 feet. Since the distances involved in all of the assessments are relatively small, and other conditions exist in the area that could offset the attenuation levels described, it is reasonable to assume that the assessments presented are not significantly skewed by limiting calculations to spherical spreading. Nevertheless, due to the conservative nature of the scenario, actual sound levels emanating off-site would be expected to be somewhat lower than those shown.

Finally, it should also be noted that the areas considered are already exposed to elevated day-night average noise levels (between L_{dn} 60 and 65) resulting from aviation operations. While the noise from construction activities may be noticed while it is occurring, its overall duration would be relatively brief and would not be expected to significantly alter the acoustic environment of the region.

4.2.2 No Action Alternative

No impacts from noise would occur under this alternative.

4.3 SOILS

4.3.1 Proposed Action

Approximately 1.36 acres of surface soil would be disturbed during site preparation and construction. Since the Foxworth Sand soils are highly permeable, water tends to filter through them, minimizing the amount of erosion that occurs with rainfall events. Transport of soil offsite and into adjacent surface water areas (Weekley Bayou) would also be limited due to the landscaped area that exists between the construction site and Weekley Bayou. Erosion control Best Management Practices (BMPs) would also be employed during site preparation and facility construction, reducing the amount of soil that could be transported offsite. Examples include silt fencing and hay bales. All disturbed ground areas would be reseeded with native grasses. Use of weed-free hay bales and weed-free seeds for revegetation would be employed, and equipment would be cleaned prior to entering federal property to prevent the introduction and spread of invasive plant species. Therefore, erosion impacts on soils would not be significant.

Examples of BMPs include erecting barriers (normally silt fences or hay bales) at selected locations around the perimeter of the construction site to prevent sediments from being transported offsite. Given the small size of the project and the use of BMPs, impacts to soil and subsequent effects would not be significant.

4.3.2 No Action Alternative

Under this alternative, the EOD AF Unique Facility would not be constructed. No increase in soil erosion would occur.

4.4 WATER QUALITY AND WETLANDS

4.4.1 Proposed Action

Water quality and wetland areas would not be significantly affected by the Proposed Action. No direct modification to surface waters or wetlands would occur and only indirect effects from surface runoff from the construction site are possible. The nearest surface water is Weekley Bayou, which borders the proposed construction site. Soil erosion from the construction site would be minimized through the use of BMPs; thus, surface waters would not receive an appreciable increase of sediments related to this project. Figure 3-3 depicts the location of surface waters, wetland areas, and topography near the proposed construction site.

Ground water, located 30-72 inches below the land surface, would not be directly disturbed or adversely affected, though potable water consumption may increase with the addition of new buildings and any additional personnel. The increase would not place a significant burden on ground water resources.

Impervious surface area (roads, buildings, etc) would increase, increasing the amount of water that enters the stormwater drainage system. A Notice of Intent to Use the General Permit for New Stormwater Discharge Facility Construction must be submitted prior to project initiation (FAC 62-25). The Proposed Action would require coverage under the Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land (FAC 62-621) since approximately 1.36 acres would be disturbed. Coordination with AAC/EMCE would be required to obtain stormwater and any necessary utility extension permits.

Water use and stormwater management practices would be coordinated with AAC/EMCE (882-7655). Coordination would be required for final building design for stormwater permit determination, installation of backflow prevention devices, spill control and containment plans, irrigation plans and erosion BMPs. Per Air Force Instruction (AFI) 32-1067, the proponent would adopt conservation practices such as low flush toilets, low-flow faucets, and aerators for sinks/showers to preserve water supplies and minimize waste.

4.4.2 No Action Alternative

There would be no potential impacts to water quality and wetlands under this alternative.

4.5 ERP/AOC SITES

4.5.1 Proposed Action

Ground disturbance for site preparation and construction would take place on top of Site DP-97 (Figure 3-5). There are three monitoring wells located at DP-97, which would not be affected by the Proposed Action. Only minor disturbance would result and no impacts to ERP/AOC sites would occur.

4.5.2 No Action Alternative

There would be no potential impacts to ERP/AOC sites under this alternative.

5. PLANS, PERMITS, AND MANAGEMENT REQUIREMENTS

The following is a list of the plans, permits, and management requirements associated with the Proposed Action. The need for these requirements were identified by the environmental analysis process in this environmental assessment and were developed through cooperation between the proponent and interested parties involved in the Proposed Action. These requirements are to be considered as part of the Proposed Action and would be implemented through the Proposed Action's initiation.

Plans

- Site Design Plan
- Stormwater Pollution Prevention Plan

Permits

- General Permit for New Stormwater Discharge Facility Construction (FAC 62-25)
- Extension Permits for Electrical Utility Services Connection
- Extension Permits for Water and Wastewater Systems (FAC 62-555 and 62-600).
- Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land (FAC 62-621)

Management Requirements

Soils/Erosion

A Stormwater Pollution Prevention Plan is required for the Proposed Action. The Stormwater Pollution Prevention Plan and permits must be coordinated through AAC/EMCE, 882-7660. The plan must outline BMPs, including the use of silt screens and certified weed-free hay bales (to prevent the spread of invasive species) that would be initiated during construction to minimize potential erosion impacts. The construction and maintenance of roads should follow the Eglin AFB Range Road Maintenance Handbook.

Erosion control BMPs must be implemented during site preparation to minimize soil erosion near surface water areas and drainages. Examples include silt fencing and hay bales. All disturbed ground areas must be reseeded with native grasses. Use of weed-free hay bales and weed-free seeds for revegetation must be employed, and equipment would be cleaned prior to entering federal property to prevent the introduction and spread of invasive plant species.

Water Quality and Wetlands

Stormwater and wastewater permits should be coordinated with AAC/EMC, 882-7660. Drinking water, irrigation well construction or plans, and backflow prevention should be coordinated with AAC/EMCE, 882-7659. All completion reports required by FDEP must be submitted to AAC/EMCE. Per AFI 32-1067, paragraph 11, the proponent should follow innovative

Plans, Permits, and Management Requirements

approaches such as low flush toilets, low-flow faucets, and aerators for sinks/showers to preserve water supplies and minimize waste.

Since shallow groundwater contamination exists at the site, flow modeling and/or coordination with FDEP Corrective Actions Regulators would be required prior to any irrigation well installation.

6. LIST OF PREPARERS

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION (SAIC)

1140 Eglin Parkway
Shalimar, Florida 32579

Name/Qualifications	Contribution	Experience
<i>Catherine Brandenburg</i>	Document Production	2 years experience in document management
<i>Alexandra Locklear</i> Environmental Scientist B.S. Biology M. Environmental Management	Author	5 years environmental science
<i>W. James McKee</i> Environmental Scientist B.S. Marine Biology	Technical Lead, Author	18 years environmental science
<i>Michael Nation</i> B.S. Environmental Policy	GIS	2 years experience GIS mapping
<i>Eloise Nemzoff</i> Technical Editor	Editor	30 years experience in writing, editing, and production

7. REFERENCES AND APPLICABLE DOCUMENTS

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APPENDIX A
COASTAL ZONE MANAGEMENT ACT
CONSISTENCY DETERMINATION

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Jeb Bush
Governor

Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000Colleen M. Castile
Secretary

March 2, 2004

Mr. Stephen M. Seiber
Chief, Natural Resources Branch
501 De Leon Street, Suite 101
Eglin AFB, FL 32542-5133

RE: Department of the Air Force – Draft Environmental Assessment – Construction of Explosive Ordnance Disposal (EOD) Air Force Unique Training Facility, Eglin Air Force Base – Okaloosa County, Florida.
SAI: FL200402025300C

Dear Mr. Seiber:

The Florida State Clearinghouse, pursuant to Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced application.

The Department of Environmental Protection agrees with the Air Force that the proposed activity will require stormwater treatment and qualification for a General Permit pursuant to Chapter 62-25, Florida Administrative Code (F.A.C.). The Air Force is advised to contact the Department's Northwest District Office in Pensacola at (850) 595-8300 regarding these permit requirements. The Department also concurs that the proposed activity will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit pursuant to 62-621, F.A.C. The Air Force is advised to contact the Department's NPDES section in Tallahassee at (850) 245-7522 regarding NPDES permit requirements.

Based on the information contained in the above-referenced project and the comments provided by our reviewing agencies, as summarized above and enclosed, the state has determined that, at this stage, the proposed project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for the project must be reviewed to determine the project's continued consistency with the FCMP. The state's consistency concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Mr. Daniel Lawson at 850/245-2174.

Yours sincerely,

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/dl

cc: Dick Fancher, DEP, Northwest District

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